
Judy Van de Water, Ph.D.

Van de Water, Judy, Ph.D. Professor, Department of Internal Medicine, School of Medicine

Biography

Dr. Van de Water is a well-known immunologist whose primary interests for the past 15 years include autoimmunity, immunopathology, and molecular and cell biology. Her diverse research interests include primary biliary cirrhosis and the immunobiology of autism. Her current research includes a collaboration with the M.I.N.D. Institute on a 3-year project designed to identify antigenic epitopes in children with autism as well as a study conducted in conjunction with Dr. Suzanne Teuber, an authority on food allergy, into the role of food sensitivity in autism. Moreover, Dr. Van de Water was the Core Director of the Molecular and Cell Biology Core for the NIEHS Center for Children's Environmental Health, entitled "Environmental Factors in the Etiology of Autism", investigating potential environmental risk factors contributing to the incidence and severity of childhood autism. This project has been renewed and Dr. Van de Water is now the P.I. of Project 2, the Immunological Susceptibility in Autism.

Publications

- Cabanlit M, Maitland D, Wilson T, Simon S, Wun T, Gershwin ME, **Van de Water J**. Polyurethane shape-memory polymers demonstrate functional biocompatibility in vitro. *Macromol Biosci* 7:48-55, 2007.
- Goines P, Schauer J, Heuer L, Ashwood P, **Van de Water J**. Beta-2-microglobulin in autism spectrum disorders. *Amer J Biotech Biochem* 3:91-95, 2007.
- Cabanlit M, Wills S, Goines P, Ashwood P, **Van de Water J**. Brain-specific autoantibodies in the plasma of subjects with autistic spectrum disorder. *Ann NY Acad Sci* 1107:92-103, 2007.
- Braunschweig D, Ashwood P, Krakowiak K, Hertz-Picciotto I, Hansen R, Croen LA, Pessah IN, **Van de Water J**. Autism: Maternally Derived Antibodies Specific For Fetal Brain Proteins. *Neurotoxicology* 29:226-231, 2008.
- Martin LA, Ashwood P, Braunschweig D, Cabanlit M, **Van de Water J**, Amaral DG. Stereotypies and hyperactivity in rhesus monkeys exposed to IgG from mothers of children with autism. *Brain Behav Immun.* 22:806-16, 2008.
- Enstrom A, Onore C, Tarver A, Hertz-Picciotto I, Hansen R, Croen L, **Van de Water J**, Ashwood P. Peripheral blood leukocyte production of BDNF following mitogen stimulation in early onset and regressive autism. *American Journal of Biochemistry and Biotechnology* 4(2):121-129, 2008.
- Enstrom A, Onore C, Hertz-Picciotto I, Hansen R, Croen L, **Van de Water J**, Ashwood P. Detection of IL-17 and IL-23 in plasma samples of children with autism. *American Journal of Biochemistry and Biotechnology* 4(2):114-120, 2008.
- Croen LA, Braunschweig D, Haapanen L, Yoshida DK, Fireman B, Grether JK, Kharrazi M, Hansen RL, Ashwood P, **Van de Water J**. Maternal mid-pregnancy autoantibodies to fetal brain protein: the Early Markers for Autism Study. *Biol Psychiatry* 64(7): 583-8, 2008.

Pessah IN, Seegal RF, Lein PJ, LaSalle J, Yee BK, **Van De Water J**, Berman RF. Immunologic and neurodevelopmental susceptibilities of autism. *Neurotoxicology* 29:532-545, 2008.

Nagarajan RP, Patzel KA, Martin M, Yasui DH, Swanberg SE, Hertz-Picciotto I, Hansen RL, **Van de Water J**, Pessah IN, Jiang R, Robinson WP, LaSalle JM. MECP2 promoter methylation and X chromosome inactivation in autism. *Autism Research* 1: 169-178, 2008.

Wills S, Cabanlit M, Bennett J, Ashwood P, Amaral DG, **Van de Water J**. Detection of autoantibodies to neural cells of the cerebellum in the plasma of subjects with autism spectrum disorders. *Brain Behavior Immunity* (in press).

Croen LA, Goines P, Braunschweig D, Yolken R, Yoshida DK, Fireman B, Grether JK, Kharrazi M, Hansen RL, Ashwood P, **Van de Water J**. Brain-derived neurotrophic factor and autism: maternal and infant serum levels in the Early Markers for Autism (EMA) Study. *Autism Research* (in press).

Ashwood P, Enstrom A, Krakowiak P, Hertz-Picciotto I, Hansen R, Croen L, Ozonoff S, Pessah IN, **Van de Water J**. Decreased transforming growth factor beta1 in autism: a potential link between immune dysregulation and impairment in clinical behavioral outcomes. *J. Neuroimmunology* (in press).

Heuer L, Ashwood P, Schauer J, Goines P, Krakowiak P, Hertz-Picciotto I, Hansen R, Croen LA, Pessah IN, **Van de Water J**. Reduced Levels of Immunoglobulin in Children with Autism Correlates with Behavioral Symptoms. *Autism Research* (in press).

Enstrom AM, Lit L, Onore CE, Gregg JP, Hansen R, Pessah IN, Hertz-Picciotto I, **Van de Water JA**, Sharp FR, Ashwood P. Altered gene expression and function of peripheral blood natural killer cells in children with autism. *Brain Behavior Immunity* (in press).

Presentations

Neuroimmunology Workshop, Invited Speaker, NIMH, Washington, DC, October 2008

Gastrointestinal Issues in Autism Workshop, Massachusetts General Hospital and Ladders, Boston, MA

DAN! Think tank, Philadelphia, PA

Autism Speaks Workshop, Invited Speaker, New York, NY

Research Funding

Center Investigator and Principal Investigator Project Two: Center for Children's Environmental Health, Immunological Susceptibility in Autism (Project 2), NIH/NIEHS and US EPA, 08/01/06 to 07/31/11, \$196,724 annual direct. *The center project focuses on determining the environmental factors contributing to the development of autism. Project 2 is aimed at identifying the mechanism(s) involved the dysregulated immune system in children with autism.*

Principal Investigator: Maternal Prenatal Biologic Markers For Autism, NIH, 7/01/04 to 6/30/08, \$176,064 annual direct. *To examine maternal sera from mothers of children with autism and controls taken at 16-18 weeks gestation for biological markers related to autism spectrum disorders.*

Co-Investigator: The CHARGE Study: Childhood Autism Risks from Genetics and the Environment, NIEHS, 2/01/07 to 12/31/11, \$850,000 annual direct. *This project extends a large case-control study of three groups of children: autism, developmental delays other than autism, and general population. Goal is to investigate environmental & genetic factors contributing to autism, mechanisms involving immunologic aberrations or signature profiles of gene expression, and timing of relevant exposures.*

Principal Investigator: Predoctoral fellowship award, Autism Speaks, 4/01/08 to 3/31/10, \$32,000 annual direct. *Mentorship award for pre-doctoral student to determine the fetal brain antigens recognized by maternal antibodies. Award for Daniel Braunschweig, Ph.D. student tuition and supplies.*

Principal Investigator: Immunohistochemical Analysis of Maternal Autoantibodies in Autism, UC Davis M.I.N.D. Institute Pilot Research Grant, 7/1/07-11/30/08, \$49, 570. *Pilot to determine through immunohistochemical staining the location and cellular phenotype of the target brain autoantigens recognized by maternal antibodies.*

Investigator: Primate Models of Autism, NIMH, 09/01/08-10/1/11, \$497,083 annual direct. *The goal of this study is to determine whether antibodies present in mothers of children with autism cause nonhuman primate offspring to exhibit autism-like deficits in behavior and neuropathology.*

Co-investigator: Autism Initiative, Department of Defense, 07/01/08 to 06/30/09. *A prospective multi-system evaluation of infants at risk for autism. To evaluate the biomedical and behavioral aspects of autism in at-risk siblings.*

Co-investigator: Biomarkers of Autism Risk, Autism Speaks, 09/01/08 to 08/31/10, \$93,888 annual direct. *To evaluate the risk of autism based on maternal antibodies to fetal brain proteins in a sample set taken during pregnancy. To use test developed at UCD in the Van de Water laboratory.*

Co-investigator: Murine Models of Autism, UC Davis M.I.N.D. Institute Pilot Research Grant, 07/1/08 to 06/30/09, \$24,497 annual direct. *To design a mouse model for autism based on autoantibodies found in the blood of children with autism.*

Community Service

Member, UC Davis Human Subjects Institutional Review Board
Member, Immunology Graduate Group Executive Committee
Grants Reviews for Department of Defense and Autism Speaks
Ad Hoc Grant Reviewer for NIH 2007, 2008
Editorial Board *Autism Research*, 2007